KNX®
Product documentation

GIRA

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Weather control unit with weather sensor for KNX

Order no. 5146 00, 5147 00

1. Information about the product

1.1. Product catalogue

Product name: Weather control unit with weather sensor for KNX
Order no.: 5146 00, 5147 00
Used for: Sensor

1.2. Application

The weather sensor detects temperature, brightness from three directions and wind speed. In addition, a precipitation sensor (precipitation/no precipitation) is installed on the top of the weather sensor. The weather sensor transmits the measured values and the precipitation status to the weather control unit. The weather control unit transmits these to the KNX bus.

The modular weather sensor system consists of a weather sensor (order no. 8380 00, as spare part) and a weather control unit (order no. 5147 00). The complete package of weather sensor with weather control unit has the order no. 5146 00. The devices cannot be used individually.

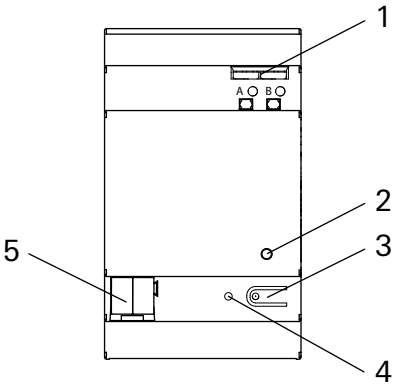
The weather control unit communicates in encrypted form in accordance with the KNX Secure standard.

The device can be updated. The firmware is easy to update with the Gira KNX Service app OTN (additional software).

- The weather sensor has the following channel types:
  - 10 sensor channels for wind, precipitation, temperature, brightness.
    Logical AND/OR linking can be created within the sensor channels to evaluate several sensor values together.
  - 8 sun protection channels for 8 façades with automatic sun protection function.
- 3 built-in brightness sensors at a distance of 90°.
- 2 objects for external brightness sensors.
- Day-night switchover can be activated and deactivated for each object.
- Communication object that provides information about communication faults between the weather sensor and the weather control unit.

1.3. Device components

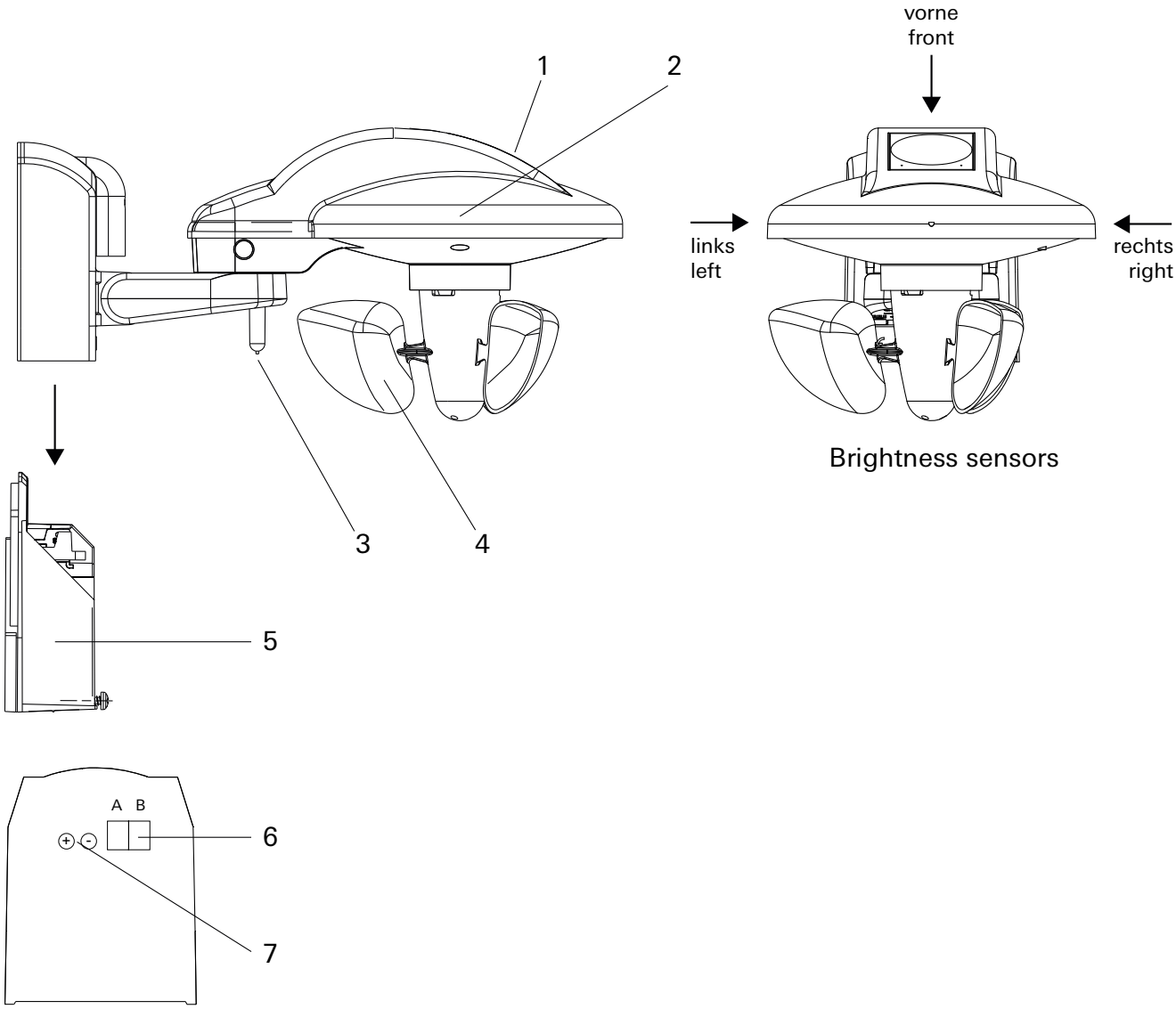
1.3.1. Weather control unit



1. Weather sensor connection
2. Weather sensor status LED
   - flashing green = OK
     Weather sensor data is received at intervals. If data packages are missing, this results in an error message.
   - red = error
     No data from the weather sensor.

   If the sensor fails, the LED goes out and, after a delay time of approx. 30 seconds, the LED lights up red. At the same time, the "sensor failure" is reported via the KNX object (object 16). If the sensor is reconnected, the LED changes back to "flashing green".
3. Programming button
4. Programming LED
5. KNX connection

1.3.2. Weather sensor



1. Precipitation sensor with heating
2. Three brightness sensors (front, right, left)
3. Temperature sensor
4. Wind sensor
5. Wall mount with connection for the operating voltage 18–34 V DC and connection to the weather control unit
6. Weather control unit connection
7. Power supply connection

1.4. General information

- If the precipitation sensor is activated, power consumption will be higher. The precipitation sensor has an integrated heating system that is used to dry the sensor surfaces (drying after precipitation and to prevent dew formation).
  - Drying in case of precipitation: Automatic heating of the sensor to 40°C in the event of "precipitation" so that the sensor surface dries quickly after the precipitation stops.
  - Frost protection: Automatic heating of the sensor if outside temperature is <5°C to +30°C. This prevents frost from forming on the sensor surface.
  - Dew suppression: The precipitation sensor is always heated to a temperature totalling the outside temperature + 13°C to reliably prevent dew from forming on the sensor surface. At an outside temperature of 10°C, the sensor is heated to 23°C.
- Precipitation can only be detected if sufficient moisture has fallen on the precipitation sensor. This means that there may be a certain delay between the first drop of precipitation during a shower and the time when the precipitation is detected, depending on the type of precipitation.
- The sensor may dry very quickly if the level of precipitation is low. It is recommended that the drop-out delay for precipitation is not set below 5 min. (default is 10 min.), otherwise "Precipitation"/"No precipitation" will be alternately reported at short intervals in the case of weak precipitation.
- As the movement time of the sun/privacy protection devices (blinds, shutters etc.) can be several minutes, they are not immediately protected in the event of sudden gusts of wind.
  Therefore, the manufacturer's maximum permissible wind speed must be observed when parameterising the wind threshold and the threshold set lower for safety reasons, see reference values of the Bundesverband Rollladen + Sonnenschutz e. V. on Seite 50.
- If the wind hits the façade head-on, an air stagnation area can develop in which the wind speed that arises can be significantly below the actual wind force.
  Therefore, the wind sensor will only be able to measure the wind speed prevailing directly at the installation site.
  This should be taken into account when setting the wind threshold for façades exposed to strong head-on winds.
  Mounting on a mast can be useful in this case.
- Temperature measurement: Normally, temperatures are measured in the shade.
  The weather sensor, on the other hand, is typically mounted in areas with sunlight.
  Due to this sunlight, the measured temperature can be far above the temperature in the shade.
- Individual safety alarms for frost, wind and precipitation must be parameterised to ensure that the window coverings (external blinds) are reliably protected against frost and ice in extreme weather conditions.

1.5. Technical data

Weather sensor

Operating voltage ext. supply	18–34 V DC
Internal energy consumption	max. 5 W
Current consumption	max. 150 to 270 mA
Connection between weather sensor and weather control unit	0.6 to 0.8 mm (e.g. J-Y(St)Y 2 x 2 x 0.8)
Connection type	push-lock terminal & connection terminal
Mounting type	wall or mast mounting
Mast mounting	ø 48 to 60 mm (accessories order no. 5148 00)
Protection type	IP44
Protection class	III
Rated surge voltage	0.8 KV
Ambient temperature	-20°C to +55°C
Wind measurement range	2–30 m/s
Brightness measurement range	1–100,000 lux
Temperature measurement range	-30°C to +60°C
Dimensions (H x W x D)	105 x 121 x 227 mm

Weather control unit

KNX medium	TP256
Start-up mode	S mode
KNX operating voltage	21–32 V DC SELV
Internal energy consumption	max. 0.5 W
Connection between weather sensor and weather control unit	0.6 to 0.8 mm (e.g. J-Y(St)Y 2 x 2 x 0.8)
KNX connection:	0.6 to 0.8 mm (e.g. J-Y(St)Y 2 x 2 x 0.8)
Maximum cable length between weather sensor and weather control unit	1000 m
Protection type	IP20
Protection class	III
Rated surge voltage	0.8 KV
Number of weather control units that can be connected to one weather sensor	20
Ambient temperature	-5°C to +45°C
Dimensions	3 HP

2. Safety instructions

Safety instructions

Electrical devices may only be installed and connected by a qualified electrician.
Precipitation sensor becomes hot during operation! Do not touch the precipitation sensor.
Improper installation may result in serious injury, e.g. from electrical shock or fire, as well as equipment damage.
The device must not be opened or operated outside of the technical specification.
These instructions are an integral part of the product and must remain with the end customer.

3. Mounting and electrical connection

3.1. System information

This device is a KNX system product and complies with the KNX guidelines. Detailed specialist knowledge acquired in KNX training courses is required to understand the system.

The function of the device depends on the software. Detailed information on software versions and their scope of functions as well as the software itself can be found in the manufacturer's product database.

The device is compatible with KNX Data Secure. KNX Data Secure provides protection against the manipulation of building automation, and can be configured within the ETS project. Detailed specialist knowledge is required. For secure start-up, a device certificate, which has been affixed to the device, is required. During mounting, remove the device certificate from the device and store it in a safe place.

Planning, installation and start-up of the device are carried out using ETS5 (ETS version 5.7.7 and above) and ETS6 (version 6.0.2 and above).

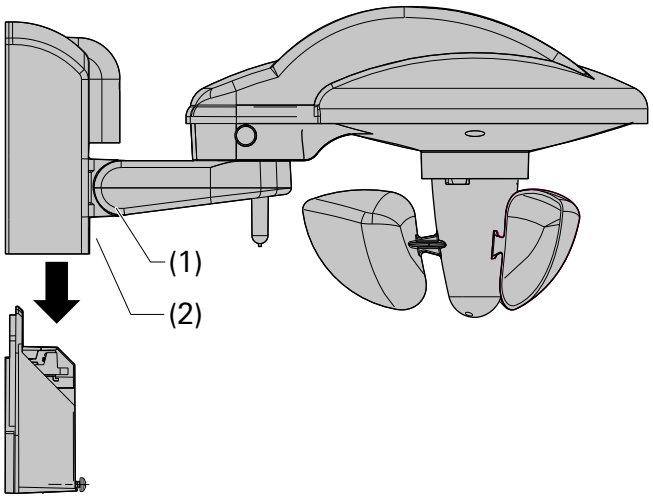
3.2. Mounting

Weather control unit: to be installed in a distributor or small housing for quick fastening to the top-hat rail (in accordance with EN 60715).

Weather sensor: Mounting on the wall of the building (where appropriate with mast mounting – order no. 5148 00).

Warning

Precipitation sensor becomes hot during operation! Do not touch the precipitation sensor.



1. Do not mount the wind sensor in a leeward position.
2. Avoid shadows (e.g. from masts etc.) and light reflections.
3. Note the mounting position.
   – Precipitation sensor at the top
   – Anemometer at the bottom
4. Mount the wall mount to the wall using the screws and washers provided (to comply with IP 44).
5. Guide the lines through the rubber seals and insert them into the terminals.
6. Loosen the screws (1).
7. Push the weather station into the wall mount from above.
8. Tighten the screws (2).
9. Align the weather station horizontally and tighten the screws (1).

3.3. connection

Only one weather sensor is required per building and up to 20 weather control units can be connected.

3.3.1. Weather sensor

1. Guide the line for the electrical connection and for the connection to the weather control unit through the rubber seals provided.
2. Connect the line for the electrical connection to the power supply.
   Pay attention to the polarity (+/-)!
3. Insert the line for the connection to the weather control unit into the plug terminal.
   Pay attention to the polarity (A/B).

3.3.2. Weather control unit

Note

Secure start-up is activated in the ETS.

Device certificate entered/scanned or added to the ETS project.

Using a high-resolution camera to scan the QR code is recommended.
Document all passwords and keep them safe.

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1. For secure operation: Remove the device certificate from the device and keep it in a safe place.
2. Connect the line from the weather sensor to the weather control unit.
   Pay attention to the polarity (A/B).
3. Connect the weather control unit to KNX with a KNX connection terminal.

3.4. Firmware update using the Gira KNX Service app OTN

The Gira KNX Service app OTN is available free of charge from the MY KNX Shop. Once installed and licensed, you can update the devices.

Before you can update devices, you need the required update files. You will receive them automatically by opening an ETS project with the devices to be updated.

The firmware update can be carried out either unencrypted (unsecure) or encrypted (secure); the procedure does not differ.

Note

Downgrading is not possible, only updating is possible.

3.5. Master reset

Master reset resets the device to its basic settings (physical address 15.15.255, firmware is retained). The devices then need to be restarted using the ETS.

Secure operation

Master reset deactivates the device security. The device can then be put back into operation with the device certificate.

If, for example, the device is not functioning correctly due to incorrect configuration or commissioning, the loaded application program can be deleted from the device by performing a master reset. Master reset resets the device to its factory default state. The device can then be put back into operation by programming the physical address and the application program.

3.5.1. Performing a master reset

1. Switch off the bus voltage or disconnect the KNX connection terminal.
2. Press and hold the programming button.
3. Switch on the bus voltage or plug in the KNX connection terminal.
4. Release the programming button after approx. 5 seconds.
   The device performs a master reset.

   The device restarts and is in the factory default state.

4. Starting up

Note

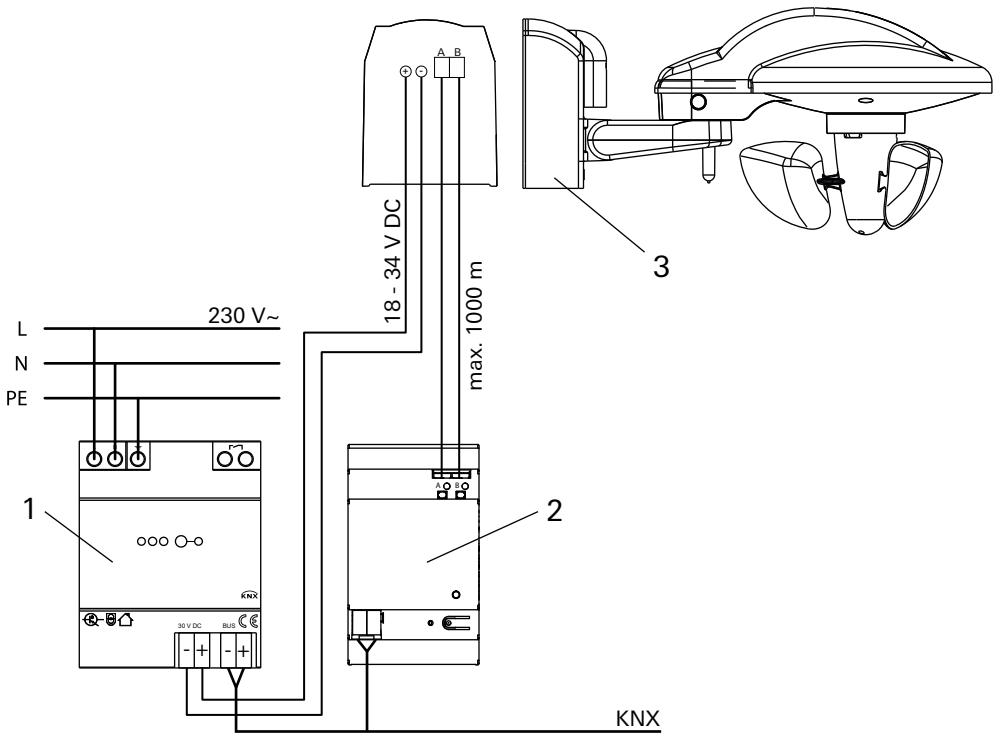
Configuration and start-up with ETS5 version 5.7.7 and above and ETS6 version 6.0.2 and above.

4.1. Loading the physical address and application program

1. Switch on the KNX bus voltage and operating voltage of the weather sensor.
2. Press the programming button on the weather control unit.
   The programming LED lights up.
3. Load the physical address and application program using the ETS.

4.2. Topology

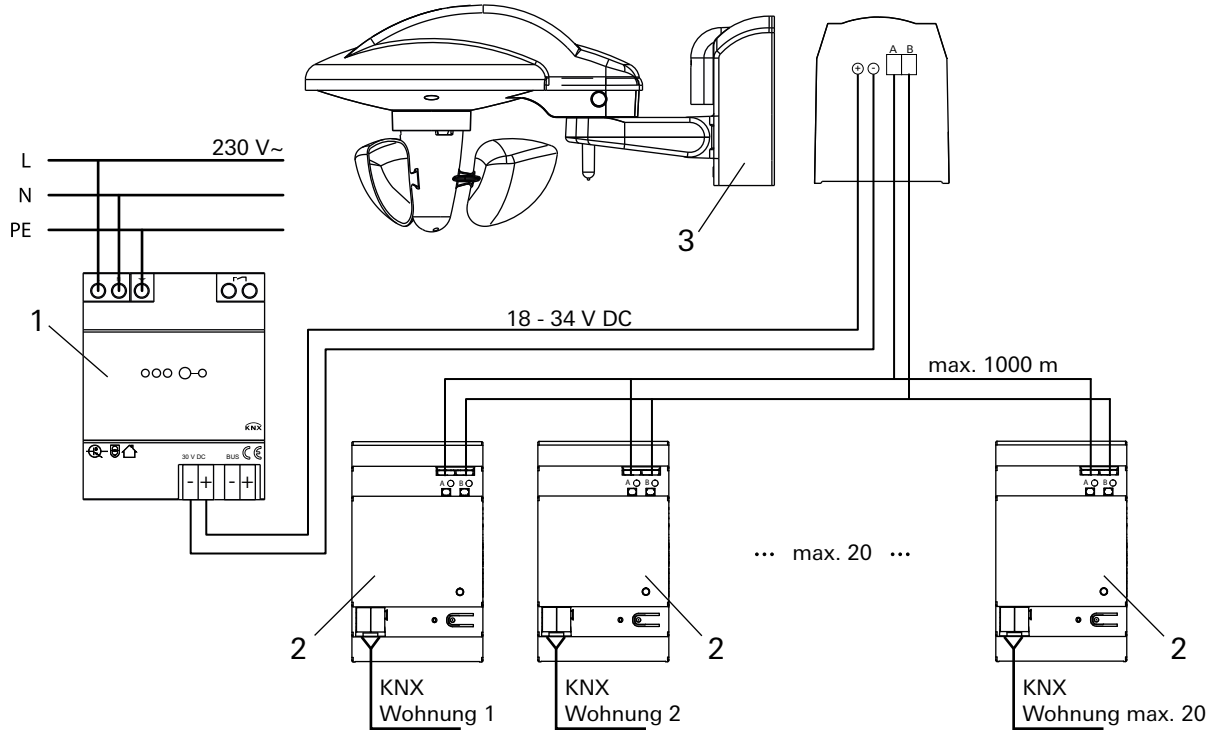
4.2.1. Single-family home



1. Power supply
2. Weather control unit
3. Weather sensor

Topology of the KNX installation of the weather sensor and weather control unit in a single-family home.

4.2.2. Apartment building



1. Power supply
2. Weather control unit for apartment 1, apartment 2, ... , max. apartment 20
3. Weather sensor

Topology of the KNX installation of the weather sensor and the weather control units in an apartment building. One weather sensor provides the weather data for all apartments. Each apartment has its own weather control unit that processes the weather data. The apartment can thus be individually programmed to the needs of the user and the location within the building (e.g. south side).

5. Application program

ETS search paths: Phys. sensors/weather station/weather control unit
Configuration: S mode standard

Available application program

Name: weather control unit B01921
Version: ETS5 (ETS version 5.7.7 and above) and ETS6 (version 6.0.2 and above)
Brief description: Evaluation of weather information such as temperature, brightness from three directions, wind speed and rain (precipitation/no precipitation). KNX Data Secure compatible. Logical linking of up to four weather conditions. 10 sensor channels. 8 sun protection channels.

6. General information

The "Information" parameter page has information on ETS compatibility and KNX Secure. Parameterisation does not take place on this parameter page.

The following sub-chapters describe the device functions. Each sub-chapter is made up of the following sections:

- Functional description
- Parameter table
- Object list

Functional description

The functional description explains the function and gives useful tips for project planning and for using the function. Cross references make it easier to search for additional information.

Parameter table

The parameter table lists all parameters associated with the function. Each parameter is documented in a table as follows.

Name of the parameter	Values of the parameter
Description of the parameter	

Object list

The object list lists and describes all communication objects associated with the function. Each communication object is documented in a table.

Object no.	This column contains the object number of the communication object.
Function	This column contains the function of the communication object.
Name	This column contains the name of the communication object.
Type	This column contains the length of the communication object.
DPT	This column contains the assignment of a data point type to a communication object. Data point types are standardised to ensure the interaction of KNX devices.
Flag	This column contains the assignment of the communication flags according to the KNX specification.
C flag	activates/deactivates the communication of the communication object
R flag	allows the value of the communication object to be read as a result of an external trigger
W flag	allows the value to be written to the communication object as a result of an external trigger
T flag	enables a value to be transmitted
U flag	allows an object value to be updated in response to feedback
I flag	forces an update of the value from the communication object when the device is switched on (read at initialisation)

7. General

Selection of the required sensor and sun protection channels

7.1. Parameter table

The following parameters apply to the entire weather control unit.

Sensor channels	Use
K 1	☑ (**yes**/no)
K 2	☐ (yes/**no**)
K 3	☐ (yes/**no**)
K 4	☐ (yes/**no**)
K 5	☐ (yes/**no**)
K 6	☐ (yes/**no**)
K 7	☐ (yes/**no**)
K 8	☐ (yes/**no**)
K 9	☐ (yes/**no**)
K 10	☐ (yes/**no**)
Activate the parameter page for the sensor channels. The ten sensor channels can trigger telegrams based on one or more physical measured values.	

Sun protection channels	Use
SK 1	☑ (**yes**/no)
SK 2	☐ (yes/**no**)
SK 3	☐ (yes/**no**)
SK 4	☐ (yes/**no**)
SK 5	☐ (yes/**no**)
SK 6	☐ (yes/**no**)
SK 7	☐ (yes/**no**)
SK 8	☐ (yes/**no**)
Activate the sun protection channels. The eight sun protection channels for controlling awnings, blinds, shutters etc.	

7.2. Object list

Object no.	Function	Name	Type	DPT	Flag
16	Status of the weather sensor system	Weather sensor system - output - error message (0 = no error, 1 = error) - status	1 bit	1.001	C, R, T

0 = weather sensor system OK.

1 = error.

In the event of sensor failure (e.g. interrupted connection between the weather sensor and the weather control unit), the weather control unit reports this status via object 16. The weather control unit then no longer sends telegrams to the bus. In addition, the status LED of the weather control unit no longer flashes green but is permanently red.

This means, for example, that a cyclical transmission of "no wind alarm" is no longer transmitted and the actuator moves to the safety position within the scope of its monitoring time.

The weather control unit updates and transmits the statuses as soon as information is received from the weather sensor again.

8. Measured values

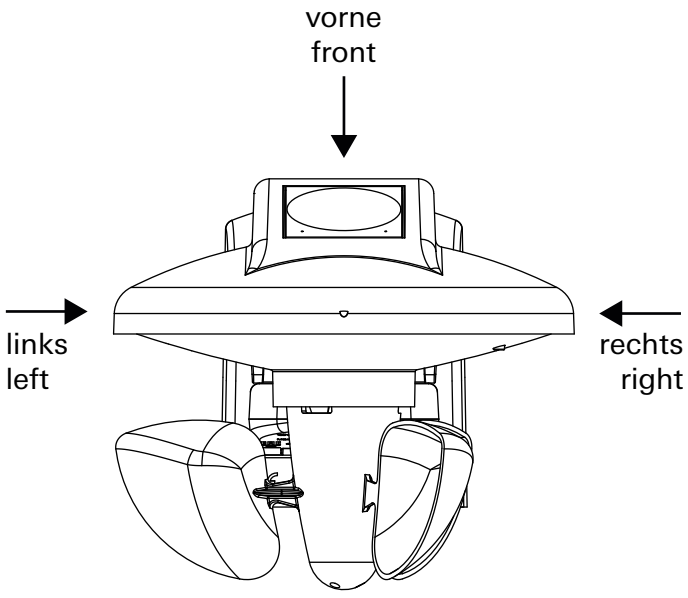
8.1. Status objects – brightness

Transmit on change	no of 10%, but at least 1 lx of 20%, but at least 1 lx **of 30%, but at least 1 lx** of 50%, but at least 1 lx
Transmit if the value has changed by 10%, 20% etc. since the last transmission. However, if a change of e.g. 10% corresponds to a change in brightness of <1 lx, transmission is only carried out with a change of >1 lx.	

Cyclical transmission	☐
Transmit brightness values cyclically, if enabled.	

Cycle time	every minute every 2 min. every 3 min. every 5 min. **every 10 min.** every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the current brightness value is transmitted.	

Show sensor system infographic	☑



8.1.1. Object list

Object no.	Function	Name	Type	DPT	Flag
1	Physical value	Front brightness sensor - output - brightness value - status	2 byte	9.004	C, R, T
Transmits the current brightness value of the front brightness sensor (device viewed from the front). Received external brightness values are not taken into account.					

Object no.	Function	Name	Type	DPT	Flag
2	Physical value	Left brightness sensor - output - brightness value - status	2 byte	9.004	C, R, T
Transmits the current brightness value of the left brightness sensor (device viewed from the front). Received external brightness values are not taken into account.					

Object no.	Function	Name	Type	DPT	Flag
3	Physical value	Right brightness sensor - output - brightness value - status	2 byte	9.004	C, R, T
Transmits the current brightness value of the right brightness sensor (device viewed from the front). Received external brightness values are not taken into account.					

Object no.	Function	Name	Type	DPT	Flag
4	Physical value	Brightness sensors - output - highest measured value - status	2 byte	9.004	C, R, T
Reports the highest measured value of objects 1, 2 and 3. Received external brightness values are not taken into account.					

8.2. Status object – temperature

Transmit on change	no of 0.5°C **of 1.0°C** of 1.5°C of 2.0°C of 1.5°C
Transmit if the value has changed by, for example, 0.5°C or 1°C etc. since the last transmission.	

Cyclical transmission	☐
Transmit temperature value cyclically, if enabled.	

Cycle time	every minute every 2 min. every 3 min. every 5 min. **every 10 min.** every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.

How often the current temperature value is transmitted.

Temperature calibration	-6.4 K to 6.3 K, **0**
Correction value for the temperature measurement if the transmitted temperature deviates from the actual ambient temperature. Example: Temperature = 20°C, transmitted temperature = 21°C, correction value = -10 (i.e. -10 x 0.1°C)	

8.2.1. Object list

Object no.	Function	Name	Type	DPT	Flag
5	Physical value	Temperature sensor - output - actual temperature - status	2 byte	9.001	C, R, T
Transmits the current temperature value in the event of a change and/or cyclically, depending on the parameterisation.					

8.3. Status object – wind speed

Unit	**m/s** km/h Beaufort
Unit for the measured wind speed.	

Transmit on change [m/s]	no of 10% but at least 0.5 m/s **of 20% but at least 0.5 m/s** of 30% but at least 1.0 m/s of 50% but at least 1.0 m/s
Transmit if the value has changed by 10%, 20%, 30% or 50% since the last transmission.	

Transmit on change [km/ h]	no of 10% but at least 1.8 km/h **of 20% but at least 1.8 km/h** of 30% but at least 3.6 km/h of 50% but at least 3.6 km/h
Transmit if the value has changed by 10%, 20%, 30% or 50% since the last transmission.	

Transmit on change [Beaufort]	○ not due to a change ⊙ on change in wind force
Transmit if the value has changed by one wind force.	

Cyclical transmission	☐ (yes/**no**)
Transmit wind speed cyclically, if enabled.	

Cycle time	every minute every 2 min. every 3 min. every 5 min. **every 10 min.** every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the current wind speed is transmitted.	

8.3.1. Object list

Object no.	Function	Name	Type	DPT	Flag
6	Physical value	Wind sensor - output - wind speed (m/s) - status	2 byte	9.005	C, R, T
6	Physical value	Wind sensor - output - wind speed (km/h) - status	2 byte	9.028	C, R, T
6	Physical value	Wind sensor - output - wind speed (Bft) - status	1 byte	20.014	C, R, T
Transmits the current wind speed in the event of a change and/or cyclically, depending on the parameterisation. The unit used, i.e. m/s, km/h or Beaufort, is set on the "Measured values" parameter page.					

8.4. Status object - precipitation

- If the precipitation sensor is activated, power consumption will be higher. The precipitation sensor has an integrated heating system that is used to dry the sensor surfaces (drying after precipitation and to prevent dew formation).
  - Drying in case of precipitation: Automatic heating of the sensor to 40°C in the event of "precipitation" so that the sensor surface dries quickly after the precipitation stops.
  - Frost protection: Automatic heating of the sensor if outside temperature is <5°C to +30°C. This prevents frost from forming on the sensor surface.
  - Dew suppression: The precipitation sensor is always heated to a temperature of +13°C to reliably prevent dew from forming on the sensor surface.
- Precipitation can only be detected if sufficient moisture has fallen on the precipitation sensor. This means that there may be a certain delay between the first drop of precipitation during a shower and the time when the precipitation is detected, depending on the type of precipitation.
- The sensor may dry very quickly if the level of precipitation is low. It is recommended that the drop-out delay for precipitation is not set below 5 min. (default is 10 min.), otherwise "Precipitation"/"No precipitation" will be alternately reported at short intervals in the case of weak precipitation.

Precipitation message on change	☑ (**yes**/no)
Always transmit when precipitation starts or stops. If the precipitation sensor is activated, power consumption will be higher. The precipitation sensor has an integrated heating system that is used to dry the sensor surfaces (drying after precipitation and to prevent dew formation).	

Cyclical transmission	☐ (yes/**no**)
Transmit the precipitation status cyclically, if enabled.	

Cycle time	every minute every 2 min. every 3 min. every 5 min. **every 10 min.** every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the current precipitation status is transmitted.	

Evaluation delay Precipitation switchover → no precipitation	None 1 min. 2 min. 3 min. 5 min. **10 min.** 15 min.
Once the precipitation has stopped, status "0" is transmitted immediately [none] or only after a delay time [1 min. to 15 min.] has elapsed. Until then, status "1" is reported.	

8.4.1. Object list

Object no.	Function	Name	Type	DPT	Flag
7	Precipitation/no precipitation	Precipitation sensor - output - precipitation message - status	1 bit	1.001	C, R, T
This 1-bit object transmits the current status "1" (precipitation) or "0" (no precipitation). Depending on the parameterisation, transmission is only carried out if the status has changed or in the event of a change or cyclically.					

9. Sensor channels (K)

Sensor channels K 1 to K 10 can be used for sub-tasks (e.g. pure brightness threshold) or for any combination of measured variables

A channel consists of up to four logically linked weather conditions, i.e.:

- If brightness is above/below threshold value AND
- If temperature is above/below threshold value AND
- If wind speed is above/below threshold value AND
- If precipitation is present/not present

Or:

- If brightness is above/below threshold value OR
- If temperature is above/below threshold value OR
- If wind speed is above/below threshold value OR
- If precipitation is present/not present

A non-relevant condition (e.g. temperature) can be omitted and is ignored in the link.

The fulfilment or non-fulfilment of the AND/OR link results in a telegram being transmitted to the associated channel object (e.g. channel 1.1).
If required, a second object (e.g. channel 1.2) can also be activated and thus a second telegram can also be transmitted.

Each sensor channel has a blocking object and an object for setting the brightness threshold.

There are three sensors available for brightness measurement.
For applications in the brightness range below 100 lx, e.g. as a "day-night switchover", the use of the front sensor is recommended, as this sensor has a finer resolution in this range than the other sensors.

The sensor channels are activated on the "General" parameter page.
Different parameters are available depending on the function set.

9.1. K1 – general (day-night switchover)

Name	Day-night switchover
Enter a sensor channel "Name". For sensor channel 1, the default setting "Day-night switchover" is entered.	

Channel function	Select channel function **Brightness sensor** Temperature sensor Wind sensor Precipitation sensor Link sensors
Selection of the sensors (brightness, temperature, wind, precipitation) for this sensor channel. The "Link sensors" parameter is used to logically link several measured variables to a sensor channel (AND or OR). For sensor channel 1, the default setting "Brightness sensor" is parameterised.	

Sensor source	**Front sensor** Left sensor Right sensor highest measured value of the three sensors
Selection of the brightness sensor (front, left, right) used to measure the brightness values. highest measured value of the three sensors: The values of the three sensors are compared with each other and only the highest value is taken into account in each case. For sensor channel 1, the default setting "Sensor front" is set.	

Day-night switchover	☑ (**yes**/no)
For sensor channel 1, the "day-night switchover" is preset.	

Brightness detection

Day mode when brightness is above	3 to 90,000 lx, **100 lx**
The weather control unit is in day mode if the brightness value is above the entered threshold.	

Night mode when brightness is less than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The weather control unit is in night mode if the brightness value is below the entered threshold. Night mode (20% of the threshold value, but at least 1 lx): • Fulfilled if the brightness value falls below 80 lx (100 lx - 20% = 80 lx).	

Evaluation delay Switchover from night → day	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., **3 min.**, 5 min. 10 min., 15 min., 20 min.
Response time in the morning when it becomes brighter and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Evaluation delay Switchover from day → night	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Response time in the evening when it becomes darker and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Automatic day-night function

This makes it possible to deactivate day-night switchover, e.g. if the residents will not be at home for a longer period and therefore automatic mode is not desired.

When automatic day-night function is "OFF"	**No response** As for day As for night
No response: No telegrams if automatic day-night function is switched off. Response as set in the "In day mode" parameter, see Seite 25. Response as set in the "In night mode" parameter, see Seite 25.	

When automatic day-night function is "ON"	○ No response/⊙ **Update channel**
No response: When automatic day-night function is activated, no telegram is transmitted. Update channel: The current channel status is transmitted after activating the automatic day-night function.	

Brightness threshold

Value can be overwritten by object	☑ (**yes**/no)
The parameterised day-night brightness threshold can be changed at any time via bus telegrams.	

Overwrite value during download	☑ (**yes**/no)
yes: During an ETS download, the day-night brightness threshold currently stored in the weather control unit is deleted and overwritten by the value set in the ETS. no: An ETS download has no effect on the day-night brightness threshold currently stored in the weather control unit. Exception: During initial commissioning (i.e. when the device memory is empty), all ETS parameter values are downloaded.	

9.1.1. Day-night switchover object

Here, the response of the day-night switchover on fulfilment or non-fulfilment of the conditions is parameterised.

Object 1

Function	**Switching** Value transmitter Scene auxiliary unit
Sets the function for the output object of the day-night switchover. Either as a 1-bit switching object (On/Off), 1-byte value transmitter (0 to 255) or scene auxiliary unit.	

Commands

In day mode	OFF **ON** No response
If the "Function" parameter is set to switching and the sensor condition is fulfilled, an ON or OFF telegram is transmitted or there is no response.	

In night mode	**OFF** ON No response
If the "Function" parameter is set to switching and the sensor condition is not fulfilled, an ON or OFF telegram is transmitted or there is no response.	

In day mode Value	⊙ **Transmit value**/○ No response 0 to **255**
If the "Function" parameter is set to value transmitter and the sensor condition is fulfilled, the set value is transmitted or there is no response.	

In night mode Value	⊙ **Transmit value**/○ No response **0** to 255
If the "Function" parameter is set to value transmitter and the sensor condition is not fulfilled, the set value is transmitted or there is no response.	

In day mode Scene number	⊙ **Transmit scene number**/○ No response 1 to 64, **1**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is fulfilled, the set scene number is transmitted or there is no response.	

In night mode Scene number	⊙ **Transmit scene number**/○ No response 1 to 64, **2**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is not fulfilled, the set scene number is transmitted or there is no response.	

Transmission behaviour

Cyclical transmission	☐ (yes/**no**)
Transmit the sensor condition cyclically, if enabled.	

Cycle time	**every minute** every 2 min. every 3 min. every 5 min. every 10 min. every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the sensor condition is transmitted.	

9.1.2. Object list – (day-night switchover)

Object no.	Function	Name	Type	DPT	Flag
21, 27, 33, 39, 45, 51, 57, 63, 69, 75	Switching	Sensor channel 1 to 10 - (day-night switchover) - output - object 1 - switching	1 bit	1.001	C, R, T
	Value transmitter	Sensor channel 1 to 10 - (day-night switchover) - output - object 1 - value transmitter 0...255	1 byte	5.010	C, R, T
	Scene auxiliary unit	Sensor channel 1 to 10 - (day-night switchover) - output - object 1 - scene auxiliary unit - scene number	1 byte	17.001	C, R, T
The output object of the day-night switchover of the sensor channel. The type of object depends on the selected function (switching, value transmitter, scene auxiliary unit) (see Seite 25).					

Object no.	Function	Name	Type	DPT	Flag
23, 29, 35, 41, 47, 53, 59, 65, 71, 77	Activate/deactivate day-night switchover	Sensor channel 1 to 10 - (day-night switchover) - input - automatic day-night function - On/Off	1 bit	1.003	C, R, W
Only available if day-night switchover is activated. The behaviour when activating/deactivating the automatic day-night function and the direction of action are selected on the Object 1 parameter page (see Seite 25).					

Object no.	Function	Name	Type	DPT	Flag
24 ,30, 36, 42, 48, 54, 60, 66, 72, 78	Default/status	Sensor channel 1 to 10 - (day-night switchover) - input/output - brightness threshold - default/status	2 bytes	9.004	C, R, W, T
This object can be used to change the parameterised brightness threshold of the day-night switchover of the sensor channel at any time via bus telegram.					

9.2. K (1 to 10) – general (name)

Name...	
Enter a sensor channel "Name".	

Channel function	**Select channel function** Brightness sensor Temperature sensor Wind sensor Precipitation sensor Link sensors
Selection of the sensors (brightness, temperature, wind, precipitation) for this sensor channel. The "Link sensors" parameter is used to logically link several measured variables to a sensor channel (AND or OR).	

9.2.1. Channel function – brightness sensor

Sensor source	**Front sensor** Left sensor Right sensor Highest measured value of the three sensors
Selection of the brightness sensor (front, left, right) used to measure the brightness values. Highest measured value of the three sensors: The values of the three sensors are compared with each other and only the highest value is taken into account in each case.	

Output objects

Number of objects	○ **1** ⊙ 2
Number of output objects for the channel function.	

Brightness sensor

Activate function if brightness	⊙ **above**/○ below 3 to 90,000 lx, **10,000 lx**
above: The channel condition is fulfilled if the brightness value is above the entered threshold. below: The channel condition is fulfilled if the brightness value is below the entered threshold.	

Deactivate function if brightness less than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The hysteresis prevents frequent switchover in the event of small changes in brightness. Parameter is visible when "Activate function if brightness = above" is set. Example: Light hysteresis = 20% of the threshold value, but at least 1 lx Channel condition (brightness threshold): "above 4500 lx" • Is fulfilled from 4500 lx and no longer fulfilled at 4500 lx - 20% = 3600 lx	

Deactivate function if brightness greater than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The hysteresis prevents frequent switchover in the event of small changes in brightness. Parameter is visible when "Activate function if brightness = below" is set. Example: Light hysteresis = 20% of the threshold value, but at least 1 lx Channel condition (brightness threshold): "below 100 lx" • Is fulfilled below 100 lx and no longer fulfilled at 100 lx + 20% = 120 lx	

Evaluation delay Switchover function inactive → function active	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., **3 min.**, 5 min. 10 min., 15 min., 20 min.
Evaluation delay time depending on the parameterisation under "Activate function if brightness", e.g. if it becomes brighter and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Evaluation delay Switchover function active → function inactive	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Evaluation delay time depending on the parameterisation under "Activate function if brightness", e.g. if it becomes darker and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Brightness threshold

Value can be overwritten by object	☑ (**yes**/no)
The parameterised brightness threshold can be changed at any time via bus telegrams.	

Overwrite value during download	☑ (**yes**/no)
yes: During an ETS download, the brightness threshold currently stored in the weather control unit is deleted and overwritten by the value set in the ETS. no: An ETS download has no effect on the brightness threshold currently stored in the weather control unit. Exception: During initial commissioning (i.e. when the device memory is empty), all ETS parameter values are downloaded.	

Blocking function

Use the blocking function	☐ (yes/**no**)
Show blocking parameter and blocking object.	

At start of blocking	**No response** as if sensor condition not fulfilled as if sensor condition fulfilled
No response: No telegrams as long as the block is set. Response as set in the parameter "If sensor condition not fulfilled" (see Seite 38). Response as set in the parameter "If sensor condition fulfilled" (see Seite 38).	

At end of blocking	○ No response/⊙ **Update channel**
No response: When the block is removed, transmission does not restart automatically. Update channel: The current channel status is transmitted immediately after the block is removed.	

Object polarity	⊙ **0 = enabled/1 = blocked** ○ 1 = enabled/0 = blocked
The "Object polarity" parameter determines which object value is blocked or enabled.	

9.2.2. Channel function – temperature sensor

Output objects

Number of objects	⊙ **1** ○ 2
Number of output objects for the channel function.	

Temperature sensor

Activate temperature alarm if temperature	○ above/⊙ **below** -30°C to 40°C, **5°C**
above: The channel condition is fulfilled if the temperature value is above the entered threshold. below: The channel condition is fulfilled if the temperature value is below the entered threshold.	

Deactivate temperature alarm if threshold is not reached by	**1.0 K** 1.5 K 2.0 K 2.5 K
The threshold prevents frequent switchover in the event of small temperature fluctuations. Parameter is visible when "Activate temperature alarm if temperature = above" is set. Example: Deactivate temperature alarm if threshold is not reached by = 1 K Channel condition (temperature threshold): "above 5°C" • Is fulfilled from 5°C and no longer fulfilled at 5°C - 1 K = 4°C	

Deactivate temperature alarm if threshold is exceeded by	**1.0 K** 1.5 K 2.0 K 2.5 K
The threshold prevents frequent switchover in the event of small temperature fluctuations. Parameter is visible when "Activate temperature alarm if temperature = below" is set. Example: Deactivate temperature alarm if threshold is not reached by = 1 K Channel condition (temperature threshold): "below 3°C" • Is fulfilled below 3°C and no longer fulfilled at 3°C + 1 K = 4°C	

Behaviour if temperature sensor error detected	as if sensor condition not fulfilled as if sensor condition fulfilled **no longer transmit**
If the temperature sensor reports an error, an object value is sent according to the selection made (e.g. no longer transmit).	

Blocking function

Use the blocking function	☐ (yes/**no**)
Show blocking parameter and blocking object.	

At start of blocking	**No response** as if sensor condition not fulfilled as if sensor condition fulfilled
No response: No telegrams as long as the block is set. Response as set in the parameter "If sensor condition not fulfilled" (see Seite 38). Response as set in the parameter "If sensor condition fulfilled" (see Seite 38).	

At end of blocking	○ No response/⊙ **Update channel**
No response: When the block is removed, transmission does not restart automatically. Update channel: The current channel status is transmitted immediately after the block is removed.	

Object polarity	⊙ **0 = enabled/1 = blocked** ○ 1 = enabled/0 = blocked
The "Object polarity" parameter determines which object value is blocked or enabled.	

9.2.3. Channel function – wind sensor

Output objects

Number of objects	⊙ **1** ○ 2
Number of output objects for the channel function.	

Wind sensor

Activate wind alarm if wind speed	⊙ **above**/○ below 4 m/s (approx. 14 km/h) to 30 m/s (approx. 108 km/h) **8 m/s (approx. 29 km/h)**
above: The channel condition is fulfilled if the wind speed is above the entered threshold. below: The channel condition is fulfilled if the wind speed is below the entered threshold. As the movement time of the sun/privacy protection devices (blinds, shutters etc.) can be several minutes, they are not immediately protected in the event of sudden gusts of wind. Therefore, the manufacturer's maximum permissible wind speed must be observed when parameterising the wind threshold and the threshold set lower for safety reasons, see reference values of the Bundesverband Rollladen + Sonnenschutz e. V. on Seite 50.	

Evaluation delay Switchover from wind alarm → no wind alarm	None 5 sec. 10 sec. 20 sec. 30 sec. 1 min. 2 min. 3 min. 5 min. **10 min.** 15 min. 20 min.
none: The channel status changes immediately after the wind threshold is not reached. 5 sec. to 20 min.: The channel status only changes after the set delay time has elapsed.	

Show wind scale info table	☐ (yes/**no**)
An information table on the wind speeds is displayed, see Seite 49.	

Blocking function

Use the blocking function	☐ (yes/**no**)
Show blocking parameter and blocking object.	

At start of blocking	**No response** as if sensor condition not fulfilled as if sensor condition fulfilled
No response: No telegrams as long as the block is set. Response as set in the parameter "If sensor condition not fulfilled" (see Seite 38). Response as set in the parameter "If sensor condition fulfilled" (see Seite 38).	

At end of blocking	○ No response/⊙ **Update channel**
No response: When the block is removed, transmission does not restart automatically. Update channel: The current channel status is transmitted immediately after the block is removed.	

Object polarity	⊙ **0 = enabled/1 = blocked** ○ 1 = enabled/0 = blocked
The "Object polarity" parameter determines which object value is blocked or enabled.	

9.2.4. Channel function – precipitation sensor

Output objects

Number of objects	⊙ **1** ○ 2
Number of output objects for the channel function.	

Precipitation detection

Precipitation condition	⊙ Precipitation, 0 no precipitation
Setting the precipitation condition for objects 1, 2. If precipitation is detected, the object "If sensor condition fulfilled" is sent. Parameterisation of the objects is explained on Seite 38.	

Blocking function

Use the blocking function	☐ (yes/**no**)
Show blocking parameter and blocking object.	

At start of blocking	**No response** as if sensor condition not fulfilled as if sensor condition fulfilled
No response: No telegrams as long as the block is set. Response as set in the parameter "If sensor condition not fulfilled" (see Seite 38). Response as set in the parameter "If sensor condition fulfilled" (see Seite 38).	

At end of blocking	○ No response/⊙ **Update channel**
No response: When the block is removed, transmission does not restart automatically. Update channel: The current channel status is transmitted immediately after the block is removed.	

Object polarity	⊙ **0 = enabled/1 = blocked** ○ 1 = enabled/0 = blocked
The "Object polarity" parameter determines which object value is blocked or enabled.	

9.2.5. Channel function – link sensors

Output objects

Number of objects	⊙ **1** ○ 2
Number of output objects for the channel function.	

Link sensors

Brightness	☐ (yes/**no**)
Temperature	☑ (**yes**/no)
Precipitation	☑ (**yes**/no)
Wind	☐ (yes/**no**)
Selection of up to four weather conditions that are logically linked. • If brightness is above/below threshold value • If temperature is above/below threshold value • If precipitation is present/not present • If wind speed is above/below threshold value	

Brightness Sensor source	**Front sensor** Left sensor Right sensor Highest measured value of the three sensors
Selection of the brightness sensor (front, left, right) used to measure the brightness values. Highest measured value of the three sensors: The values of the three sensors are compared with each other and only the highest value is taken into account in each case. Only visible if "Brightness" has been selected as the sensor.	

Type of link	⊙ **AND**/○ OR
AND Fulfilled if the conditions of all selected weather measured variables are fulfilled. Example: Temperature AND precipitation. (e.g. safety function for blinds so that frost cannot settle on the slats.) OR Fulfilled if the condition of one of the selected weather measured variables is fulfilled. Example: Wind OR precipitation (including safety function for awning)	

Brightness

Parameter visible if brightness is selected.

Day-night switchover	☐ (yes/**no**)
The linked brightness sensor is intended for "day-night switchover".	

Activate function if brightness	⊙ **above**/○ below 3 to 90,000 lx, **10,000 lx**
above: The channel condition is fulfilled if the brightness value is above the entered threshold. below: The channel condition is fulfilled if the brightness value is below the entered threshold.	

Deactivate function if brightness less than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The hysteresis prevents frequent switchover in the event of small changes in brightness. Parameter is visible when "Activate function if brightness = above" is set. Example: Light hysteresis = 20% of the threshold value, but at least 1 lx Channel condition (brightness threshold): "above 4500 lx" • Is fulfilled from 4500 lx and no longer fulfilled at 4500 lx - 20% = 3600 lx	

Deactivate function if brightness greater than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The hysteresis prevents frequent switchover in the event of small changes in brightness. Parameter is visible when "Activate function if brightness = below" is set. Channel condition (brightness threshold): "below 100 lx" • Is fulfilled below 100 lx and no longer fulfilled at 100 lx + 20% = 120 lx	

Evaluation delay Switchover function inactive → function active	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., **3 min.**, 5 min. 10 min., 15 min., 20 min.
Evaluation delay time when it becomes brighter and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Evaluation delay Switchover function active → function inactive	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Evaluation delay time when it becomes darker and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Brightness (day-night switchover)

Parameter visible if brightness and day-night switchover selected.

Day mode when brightness is above	3 to 90,000 lx, **100 lx**
The weather control unit is in day mode if the brightness value is above the entered threshold.	

Night mode when brightness is less than	**20% of the threshold value, but at least 1 lx** 30% of the threshold value, but at least 1 lx 50% of the threshold value, but at least 1 lx
The weather control unit is in night mode if the brightness value is below the entered threshold. Night mode (20% of the threshold value, but at least 1 lx): • Fulfilled if the brightness value falls below 80 lx (100 lx - 20% = 80 lx).	

Evaluation delay Switchover from night → day	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., **3 min.**, 5 min. 10 min., 15 min., 20 min.
Response time in the morning when it becomes brighter and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Evaluation delay Switchover from day → night	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Response time in the evening when it becomes darker and thus the set brightness threshold is passed. This setting prevents the transmission of contradictory telegrams in the event of brief changes in brightness.	

Value can be overwritten by object	☑ (**yes**/no)
The parameterised brightness threshold can be changed at any time via bus telegrams.	

Overwrite value during download	☑ (**yes**/no)
yes: During an ETS download, the brightness threshold currently stored in the weather control unit is deleted and overwritten by the value set in the ETS. no: An ETS download has no effect on the brightness threshold currently stored in the weather control unit. Exception: During initial commissioning (i.e. when the device memory is empty), all ETS parameter values are downloaded.	

Temperature sensor

Parameter visible if temperature is selected.

Activate temperature alarm if temperature	○ above/⊙ **below** -30°C to 40°C, **3°C**
above: The channel condition is fulfilled if the temperature value is above the entered threshold. below: The channel condition is fulfilled if the temperature value is below the entered threshold.	

Deactivate temperature alarm if threshold is not reached by	**1.0 K** 1.5 K 2.0 K 2.5 K
The threshold prevents frequent switchover in the event of small temperature fluctuations. Parameter is visible when "Activate temperature alarm if temperature = above" is set. Example: Deactivate temperature alarm if threshold is not reached by = 1 K Channel condition (temperature threshold): "above 5°C" • Is fulfilled from 5°C and no longer fulfilled at 5°C - 1 K = 4°C	

Deactivate temperature alarm if threshold is exceeded by	**1.0 K** 1.5 K 2.0 K 2.5 K
The threshold prevents frequent switchover in the event of small temperature fluctuations. Parameter is visible when "Activate temperature alarm if temperature = below" is set. Example: Deactivate temperature alarm if threshold is not reached by = 1 K Channel condition (temperature threshold): "below 3°C" • Is fulfilled below 3°C and no longer fulfilled at 3°C + 1 K = 4°C	

Behaviour if temperature sensor error detected	as if sensor condition not fulfilled as if sensor condition fulfilled **no longer transmit**
If the temperature sensor reports an error.	

Precipitation

Parameter visible if precipitation is selected.

Precipitation condition	⊙ Precipitation, 0 no precipitation
Setting the precipitation condition for objects 1, 2 (see Seite 38).	

Wind

Parameter visible if wind is selected.

Activate wind alarm if wind speed	⊙ **above**/○ below 4 m/s (approx. 14 km/h) to 30 m/s (approx. 108 km/h) **8 m/s (approx. 29 km/h)**
above: The channel condition is fulfilled if the wind speed is above the entered threshold. below: The channel condition is fulfilled if the wind speed is below the entered threshold.	

Evaluation delay Switchover from wind alarm → no wind alarm	None 5 sec. 10 sec. 20 sec. 30 sec. 1 min. 2 min. 3 min. 5 min. **10 min.** 15 min. 20 min.
none: The channel status changes immediately after the wind threshold is not reached. 5 sec. to 20 min.: The channel status only changes after the set delay time has elapsed.	

Show wind scale info table	☐ (yes/**no**)
An information table on the wind speeds is displayed, see page Seite 49.	

Blocking function

Use the blocking function	☐ (yes/**no**)
Show blocking parameter and blocking object.	

At start of blocking	**No response** as if sensor condition not fulfilled as if sensor condition fulfilled
No response: No telegrams as long as the block is set. Response as set in the parameter "If sensor condition not fulfilled" (see Seite 38). Response as set in the parameter "If sensor condition fulfilled" (see Seite 38).	

At end of blocking	○ No response/⊙ **Update channel**
No response: When the block is removed, transmission does not restart automatically. Update channel: The current channel status is transmitted immediately after the block is removed.	

Object polarity	⊙ **0 = enabled/1 = blocked** ○ 1 = enabled/0 = blocked
The "Object polarity" parameter determines which object value is blocked or enabled.	

9.3. Object 1/object 2

Here, the response of the channel function on fulfilment or non-fulfilment of the conditions is parameterised.

Object 1

Function	**Switching** Value transmitter Scene auxiliary unit
Sets the function for the output object 1. Either as a 1-bit switching object (On/Off), 1-byte value transmitter (0 to 255) or scene auxiliary unit.	

Commands

If sensor condition is fulfilled	OFF **ON** No response
If the "Function" parameter is set to switching and the sensor condition is fulfilled, an ON or OFF telegram is transmitted or there is no response.	

If sensor condition is not fulfilled	**OFF** ON No response
If the "Function" parameter is set to switching and the sensor condition is not fulfilled, an ON or OFF telegram is transmitted or there is no response.	

If sensor condition is fulfilled Value	⊙ **Transmit value**/○ No response 0 to **255**
If the "Function" parameter is set to value transmitter and the sensor condition is fulfilled, the set value is transmitted or there is no response.	

If sensor condition is not fulfilled Value	⊙ **Transmit value**/○ No response **0** to 255
If the "Function" parameter is set to value transmitter and the sensor condition is not fulfilled, the set value is transmitted or there is no response.	

If sensor condition is fulfilled Value	⊙ **Transmit scene number**/○ No response 1 to 64, **1**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is fulfilled, the set scene number is transmitted or there is no response.	

If sensor condition is not fulfilled Value	⊙ **Transmit scene number**/○ No response 1 to 64, **2**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is not fulfilled, the set scene number is transmitted or there is no response.	

Transmission behaviour

Cyclical transmission	☐ (yes/**no**)
Transmit the sensor condition cyclically, if enabled.	

Cycle time	**every minute** every 2 min. every 3 min. every 5 min. every 10 min. every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the sensor condition is transmitted. If two objects are activated for the sensor channel and both are to be transmitted cyclically, the cycle time is automatically applied to both objects.	

Object 2

Function	**Switching** Value transmitter Scene auxiliary unit
Sets the function for the output object 2. Either as a 1-bit switching object (On/Off), 1-byte value transmitter (0 to 255) or scene auxiliary unit.	

Commands

If sensor condition is fulfilled	OFF **ON** No response
If the "Function" parameter is set to switching and the sensor condition is fulfilled, an ON or OFF telegram is transmitted or there is no response.	

If sensor condition is not fulfilled	**OFF** ON No response
If the "Function" parameter is set to switching and the sensor condition is not fulfilled, an ON or OFF telegram is transmitted or there is no response.	

If sensor condition is fulfilled Value	⊙ **Transmit value**/○ No response 0 to **255**
If the "Function" parameter is set to value transmitter and the sensor condition is fulfilled, the set value is transmitted or there is no response.	

If sensor condition is not fulfilled Value	⊙ **Transmit value**/○ No response **0** to 255
If the "Function" parameter is set to value transmitter and the sensor condition is not fulfilled, the set value is transmitted or there is no response.	

If sensor condition is fulfilled Value	⊙ **Transmit scene number**/○ No response 1 to 64, **1**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is fulfilled, the set scene number is transmitted or there is no response.	

If sensor condition is not fulfilled Value	⊙ **Transmit scene number**/○ No response 1 to 64, **2**
If the "Function" parameter is set to scene auxiliary unit and the sensor condition is not fulfilled, the set scene number is transmitted or there is no response.	

Transmission behaviour

Cyclical transmission	☐ (yes/**no**)
Transmit the sensor condition cyclically, if enabled.	

Cycle time	**every minute** every 2 min. every 3 min. every 5 min. every 10 min. every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
How often the sensor condition is transmitted. If two objects are activated for the sensor channel and both are to be transmitted cyclically, the cycle time is automatically applied to both objects. The cycle time can only be set as the same for objects 1 and 2.	

9.3.1. Object list

Object no.	Function	Name	Type	DPT	Flag
21, 27, 33, 39, 45, 51, 57, 63, 69, 75	Switching	Sensor channel 1 to 10 - (name) - output - object 1 - switching	1 bit	1.001	C, R, T
	Value transmitter	Sensor channel 1 to 10 - (name) - output - object 1 - value transmitter 0...255	1 byte	5.010	C, R, T
	Scene auxiliary unit	Sensor channel 1 to 10 - (name) - output - object 1 - scene auxiliary unit - scene number	1 byte	17.001	C, R, T
The first output object of a sensor channel. The type of object depends on the selected function (switching, value transmitter, scene auxiliary unit) (see Seite 37).					

Object no.	Function	Name	Type	DPT	Flag
22, 28, 34, 40, 46, 52, 58, 64, 70, 76	Switching	Sensor channel 1 to 10 - (name) - output - object 2 - switching	1 bit	1.001	C, R, T
	Value transmitter	Sensor channel 1 to 10 - (name) - output - object 2 - value transmitter 0...255	1 byte	5.010	C, R, T
	Scene auxiliary unit	Sensor channel 1 to 10 - (name) - output - object 2 - scene auxiliary unit - scene number	1 byte	17.001	C, R, T
The second output object of a sensor channel. The type of object depends on the selected function (switching, value transmitter, scene auxiliary unit) (see Seite 37).					

Object no.	Function	Name	Type	DPT	Flag
23, 29, 35, 41, 47, 53, 59, 65, 71, 77	Disabling	Sensor channel 1 to 10 - name - input - object 1 and 2 - blocking	1 bit	1.003	C, R, W
Only available if the blocking function is activated. The behaviour when setting/removing the block and the direction of action can be selected on the Objects parameter page.					

Object no.	Function	Name	Type	DPT	Flag
24 ,30, 36, 42, 48, 54, 60, 66, 72, 78	Default/status	Sensor channel 1 to 10 - (name) - input/output - brightness threshold - default/status	2 bytes	9.004	C, R, W, T
Only available if the channel is parameterised as a brightness sensor or as a combination of several sensors. This object can be used to change the parameterised brightness threshold of the sensor channel at any time via bus telegram.					

10. Sun protection channels (SK1 to 8) – general (name)

The sun protection channels can control blinds, awnings, shutters, ventilation flaps and roof windows. It is also possible to call up scene numbers.

A sun protection channel consists of:

- 1 object for setting the twilight threshold
- 1 sunshine status object (1 bit)
- 3 objects for controlling the drive (up/down, height %, slats %)
- 1 automatic sun function object
- 1 object for setting the brightness threshold

The automatic sun function can be activated and deactivated either by object or automatically depending on the twilight threshold.

The sun protection channels are activated on the "General" parameter page.

Name...	
Enter a name for the sun protection channel.	

Channel function	Blind with slat **Shutter/awning** Ventilation flap/roof window Scene auxiliary unit
Selects the channel function for the sun protection channel. The channel function controls blinds, awnings, shutters, ventilation flaps and roof windows. It is also possible to call up scene numbers.	

Brightness detection

Sensor source	**Front sensor** Left sensor Right sensor Highest measured value of the three sensors External lux value object 1 External lux value object 2
Sensor (front, left, right): Which of the three built-in brightness sensors is used for the measurements. Highest measured value of the three sensors: The values of the three sensors are compared with each other and only the highest value is taken into account in each case. External lux value object (1/2): Use brightness value from another KNX sensor.	

Activate sun protection from	2000 lx to 90,000 lx, **30,000 lx**
From which brightness the sun protection is activated.	

Twilight active from	2 lx to 500 lx, **10 lx**
Twilight threshold for detection of sunrise or sunset to automatically activate/deactivate the automatic sun function.	

Evaluation delay for brightness and twilight threshold Switchover from sun protection inactive → sun protection active	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Evaluation delay when it becomes brighter and the threshold is therefore exceeded. This delay prevents contrary responses of the drives in the event of brief changes in brightness. [i] None, 5 sec., 10 sec.: These are only intended for commissioning and testing. Drives may be damaged.	

Evaluation delay for brightness and twilight threshold Switchover from sun protection active → sun protection inactive	None 5 sec., 10 sec., 20 sec., 30 sec. 1 min., 2 min., 3 min., 5 min. **10 min.**, 15 min., 20 min.
Evaluation delay when it becomes darker and the threshold is therefore not reached. This delay prevents contrary responses of the drives in the event of brief changes in brightness. [i] None, 5 sec., 10 sec.: These are only intended for commissioning and testing. Drives may be damaged.	

Threshold can be overwritten by object	☑ (**yes**/no)
The parameterised brightness and twilight thresholds can be changed at any time via bus telegrams.	

Overwrite threshold during download	☑ (**yes**/no)
yes: During an ETS download, the brightness and twilight thresholds currently stored in the weather control unit are deleted and overwritten by the value set in the ETS. no: An ETS download has no effect on the brightness threshold currently stored in the weather control unit. Exception: During initial commissioning (i.e. when the device memory is empty), all ETS parameter values are downloaded.	

Commands

Object polarity sunshine message	⊙ **1 = sunshine/0 = no sunshine** ○ 0 = sunshine/1 = no sunshine
The parameter determines at which object value "Sunshine" or "No sunshine" is transmitted. The status object (output object) is sent as soon as the defined brightness value in lux is exceeded or not reached. This object must be located in a shared group address with the "Sunshine" input object of the respective Gira blind actuator channel. The respective position of the blind channel is defined in the device parameters of the blind actuator.	

Specify sun protection position	☐ (yes/**no**)
It is optionally possible to send motion commands for the sun protection directly via a group address. Position for the sun protection for blinds with slats, shutters/awnings and ventilation flaps/roof windows.	

10.1. Specify sun protection position – shutter/awning

When sun protection is active Position	0 to 100%, **10%**
The blind is moved to the set window covering height when the brightness threshold is exceeded. Only visible if channel function = shutter/awning.	

When sun protection is inactive	⊙ **No response** ○ Raise
If the brightness threshold is not reached, there is either no response or the shutter/awning is raised/closed. Only visible if channel function = shutter/awning	

10.2. Specify sun protection position – blind with slat

When sun protection is active Window covering height	0 to 100%, **10%**
The shutter/awning is moved to the set position when the brightness threshold is exceeded. Only visible if channel function = shutter/awning.	

When sun protection is active Slat position	0 to 100%, **50%**
The slat is moved to the set position when the brightness threshold is exceeded. Only visible if channel function = blind with slat.	

When sun protection is inactive	**No response** Raise Adjust slat
If the brightness threshold is not reached, there is either no response, the blind is raised or the slat position is changed. Only visible if channel function = blind with slat.	

Slat position	0 to 100%, **20%**
The slat is moved to the set position if the brightness threshold is not reached. Only visible if channel function = blind with slat.	

10.3. Specify sun protection position – ventilation flap/roof window

When sun protection is active Position	0 to 100%, **10%**
The ventilation flap/roof window is moved to the set position when the brightness threshold is exceeded. Only visible if channel function = ventilation flap/roof window.	

When sun protection is inactive	⊙ **No response** ○ Open
If the brightness threshold is not reached, there is either no response or the ventilation flap/roof window is opened. Only visible if channel function = ventilation flap/roof window	

10.4. Specify sun protection position – scene auxiliary unit

When sun protection is active Scene number	 1 to 64, **1**
The set scene is called up when the brightness threshold is exceeded. Only visible if channel function = scene auxiliary unit.	

When sun protection is inactive	⊙ **No response** ○ Call up scene
If the brightness threshold is not reached, there is either no response or a scene is called up. Only visible if channel function = scene auxiliary unit.	

Scene number	1 to 64, **1**
The set scene is called up if the brightness threshold is not reached. Only visible if "When sun protection is inactive = call up scenes" is set.	

10.5. Automatic sun function

This enables the sun protection to be activated/deactivated and the behaviour that applies when activating or deactivating to be defined.

It is possible to activate the sun protection manually via a 1-bit object or automatically depending on the twilight threshold.

Activation via	⊙ **1-bit object** ○ twilight threshold
This parameter determines how the automatic sun protection function is to be activated. • Via a 1-bit object, e.g. via a timer or manually via pushbutton sensors, Smart Home app or similar. • Automatically depending on the previously defined twilight threshold, see Seite 42.	

Commands

When automatic sun function is "ON"	Raise Raise at twilight **No response**
Raise: Raise blind/shutter and position accordingly if shading is required. Raise at twilight: Raise blind/shutter if the automatic sun function object is set and the twilight threshold is exceeded. No response: Drives do not move until shading is required. Only visible if "Activation via = 1-bit object" and "Channel function = blind with slat, shutter/awning and scene auxiliary unit".	

When automatic sun function is "OFF"	Raise Lower Lower at twilight **No response**
Behaviour of the drives when the automatic sun function is switched off. Only visible if "Activation via = 1-bit object" and "Channel function = blind with slat, shutter/awning and scene auxiliary unit".	

At dawn	○ Raise ⊙ **No response**
Raise: When the twilight threshold is exceeded, the blind/shutter (for example) is raised and the automatic sun function is activated. No response: When the twilight threshold is exceeded, the automatic sun function is activated. The drives do not move until shading is required. Only visible if "Activation via = twilight threshold" and "Channel function = blind with slat, shutter/awning and scene auxiliary unit".	

At dusk	Raise Lower **No response**
Behaviour of the drives when the twilight threshold is not reached in the evening. The automatic sun function is deactivated. Only visible if "Activation via = twilight threshold" and "Channel function = blind with slat, shutter/awning and scene auxiliary unit".	

When automatic sun function is "ON"	**Open** Open at twilight No response
Open: Open the ventilation flap/roof window and if shading is required. Open at twilight: Open ventilation flap/roof window if the automatic sun function object is set and the twilight threshold is exceeded. No response: Ventilation flap/roof window do not move until shading is required. Only visible if "Activation via = 1-bit object" and "Channel function = ventilation flap/roof window".	

When automatic sun function is "OFF"	Open **Close** Close at twilight No response
Behaviour of the ventilation flap/roof window when the automatic sun function is switched off. Only visible if "Activation via = 1-bit object" and "Channel function = ventilation flap/roof window".	

At dawn	⊙ **Open** ○ No response
Raise: When the twilight threshold is exceeded, the ventilation flap/roof window (for example) is opened and the automatic sun function is activated. No response: When the twilight threshold is exceeded, the automatic sun function is activated. The ventilation flap/roof window is not opened until shading is required. Only visible if "Activation via = twilight threshold" and "Channel function = ventilation flap/roof window".	

At dusk	**Open** Close No response
Behaviour of the ventilation flap/roof window when the twilight threshold is not reached in the evening. The automatic sun function is deactivated. Only visible if "Activation via = twilight threshold" and "Channel function = ventilation flap/roof window".	

10.5.1. Object list

Object no.	Function	Name	Type	DPT	Flag
19	Brightness value - status	External brightness sensor 1 - brightness value - status	2 bytes	9.004	C, R, W
Receives the brightness value of another façade from another KNX brightness sensor.					

Object no.	Function	Name	Type	DPT	Flag
20	Brightness value - status	External brightness sensor 2 - brightness value - status	2 bytes	9.004	C, R, W
Receives the brightness value of another façade from another KNX brightness sensor.					

Object no.	Function	Name	Type	DPT	Flag
81, 93, 105, 117, 129, 141, 153, 165	Blind with slat - long-term operation	Sun protection 1 to 8 - (name) - output - blind with slat - long-term operation	1 bit	1.008	C, T
This object is used to fully open or close the blind. 0 = raise 1 = lower					

Object no.	Function	Name	Type	DPT	Flag
82, 94, 106, 118, 130, 142, 154, 166	Blind with slat - position	Sun protection 1 to 8 - (name) - output - blind with slat - position	1 byte	5.001	C, R, T
Transmits the required blind position (0 to 100%) to the blind actuator when the brightness threshold is exceeded. Only visible if a sun protection position is specified.					

Object no.	Function	Name	Type	DPT	Flag
83, 95, 107, 119, 131, 143, 155, 167	Slat - position	Sun protection 1 to 8 - (name) - output - slat - position	1 byte	5.001	C, R, T
Transmits the required slat position (0 to 100%) to the blind actuator when the brightness threshold is exceeded. Only visible if a sun protection position is specified.					

Object no.	Function	Name	Type	DPT	Flag
84, 96, 108, 120, 132, 144, 156, 168	Automatic sun protection function - on/off	Sun protection 1 to 8 - (name) - input - automatic sun protection function - on/off	1 bit	1.001	C, W
This object is only available if activation of the automatic sun function via "1-bit object" has been selected on the automatic sun function parameter page. A 1 on the object activates the automatic sun function and the weather control unit transmits the required height and position telegrams to the actuator. A 0 deactivates the automatic sun function and the drives are no longer controlled by the weather control unit.					

Object no.	Function	Name	Type	DPT	Flag
87, 99, 111, 123, 135, 147, 159, 171	Twilight threshold - default/status	Sun protection 1 to 8 - (name) - input/output - twilight threshold - default/status	2 bytes	9.004	C, R, W, T
This object can be used to change the parameterised twilight threshold of the channel at any time via bus telegram.					

Object no.	Function	Name	Type	DPT	Flag
88, 100, 112, 124, 136, 148, 160, 172	Brightness threshold - default/status	Sun protection 1 to 8 - (name) - input/output - brightness threshold - default/status	2 bytes	9.004	C, R, W, T
This object can be used to change the parameterised brightness threshold of the channel at any time via bus telegram.					

Object no.	Function	Name	Type	DPT	Flag
89, 101, 113, 125, 137, 149, 161, 173	Sunshine - status	Sun protection 1 to 8 - (name) - output - sunshine - status	1 bit	1.001	C, R, T
As soon as the defined brightness value is exceeded, the control unit sends this object to the bus with a "1". If the threshold is not reached, a "0" is transmitted (polarity can be adjusted, see "Object polarity when brightness threshold is exceeded/not reached", Seite 43). This object is used for simple sun protection for blind actuators.					

11. Wind force info table

Wind speed is usually given in m/s or knots (air and sea travel). Since such an indication can only be determined by measurement, the Beaufort scale is often used, which is also used in meteorology and sea travel and serves to classify winds according to their speed. It is named after Sir Francis Beaufort, who introduced it in around 1830 as a hydrographer for the British Admiralty.

The modern Beaufort scale as used today contains not only the assignment of wind force (Beaufort number, Bft) to wind speed and a designation, but also a description according to phenomenological criteria such as sea state, land conditions and sea conditions.

Beaufort	Name	Average wind speed		Examples of the effects of the wind on land conditions
		m/s	km/h	
0	Calm	0–0.2	< 1	Smoke rises vertically
1	Light air	0.3–1.4	1–5	Wind direction shown by smoke drift
2	Light breeze	1.5–3.4	6–12	Wind felt on face; leaves rustle; wind vane moved by wind
3	Gentle breeze	3.5–5.4	13–19	Leaves and small twigs in constant motion; light flags extended
4	Moderate breeze	5.5–7.4	20–27	Raises dust and loose paper; small branches moved
5	Fresh breeze	7.5–10.4	28–37	Small trees in leaf begin to sway; crested wavelets form on inland waters
6	Strong breeze	10.5–13.4	38–48	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty
7	High wind	13.5–17.4	49–62	Whole trees in motion; inconvenience felt when walking against the wind
8	Gale	17.5–20.4	63–73	Twigs break off trees; generally impedes progress
9	Strong gale	20.5–24.4	74–87	Branches break off trees; slight structural damage (chimney pots and slates removed)
10	Storm	24.5–28.4	88–102	Trees damaged; considerable structural damage
11	Violent storm	28.5–32.4	103–117	Trees uprooted, accompanied by widespread damage
12	Hurricane	≥ 32.5	≥ 118	Devastation

Tabelle 1: Beaufort scale; source: German Meteorological Service (DWD), Offenbach, Germany

12. Notes on the tables

The data specified in the tables is based on information from Bundesverband Rollladen + Sonnenschutz e.V. Gira does not provide any warranty for the data. Further information can be obtained directly from Bundesverband Rollladen + Sonnenschutz e.V.

12.1. External blinds

In accordance with DIN EN 13659, wind classes must be specified for external blinds. The previous rule of not specifying a wind class or specifying class 0 is no longer permitted. The wind class is determined by testing in accordance with DIN EN 1932, where the assessment is based on permanent deformation or breakage.

These determined wind classes cannot easily be transferred to practical applications, in particular for setting the wind monitoring in motor-driven products.

For this reason, manufacturers are advised to specify the wind speeds for their products above which the external blinds must be retracted.

If such information is missing, the following table can be used, which has been compiled by the TKZ (Technical Competence Centre) of the BVRS (Bundesverband Rollladen + Sonnenschutz e.V.) in cooperation with leading manufacturers on the basis of empirical values.

Width [cm]	Flanged with rail	Flanged with cord	Flexible with rail	Flexible with cord
150	7 Bft or 17.4 m/s	7 Bft or 17.4 m/s	7 Bft or 17.4 m/s	7 Bft or 17.4 m/s
200	7 Bft or 17.4 m/s	7 Bft or 17.4 m/s	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s
250	7 Bft or 17.4 m/s	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s
300	7 Bft or 17.4 m/s	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s
400	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s	5 Bft or 10.4 m/s	5 Bft or 10.4 m/s
500	6 Bft or 13.4 m/s	6 Bft or 13.4 m/s	5 Bft or 10.4 m/s	5 Bft or 10.4 m/s

Tabelle 2: Recommended wind limits (upper value from Beaufort scale, Table 1) for external blinds

12.2. Awnings – general

DIN EN 1932 [6] specifies procedures for determining the wind class for awnings.

For vertical awnings, façade awnings, markisolette awnings, drop arm awnings and conservatory awnings, wind classes are determined by the specified test conditions in which the assessment is made on the basis of permanent deformation or breakage. As a result, it is not possible to assign wind speeds.

For this reason, the table was created based on many years of experience from leading awning manufacturers.

The products must be retracted when the specified wind speeds (m/s) are reached, unless otherwise specified by the manufacturer.

	Façade awning/ vertical awning	Markisolette awning	Drop arm awning	Conservatory awning
Guide rail directly (standard distance) on façade	8–10			
Cord/rod guide directly (standard distance) on façade	6–8			
Guide rail on façade, distance 30–100 cm	6	6	6	
Cord/rod guide on façade, distance 30–100 cm	6			
Guide rail on polygonal façade	6			
Cord/rod guide on polygonal façade	6			
Guide rail in the reveal	8–10	8–10	8–10	
Cord/rod guide in the reveal	6–8			
Guide rail on the roof surface				8–12

Tabelle 3: Recommended settings in m/s for wind monitoring

13. Simple sun protection

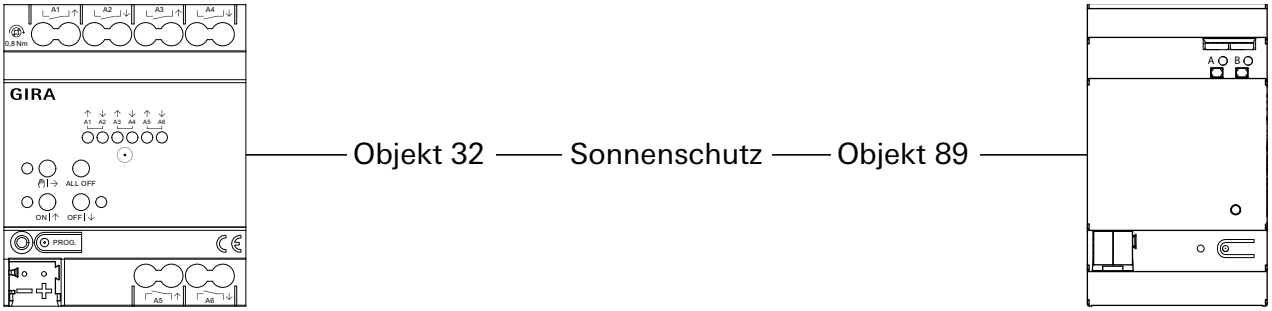
Sun protection is usually combined with blinds, shutters or awnings, enabling rooms, terraces or balconies to be shaded from the sun.

Devices

- Weather control unit with weather sensor, order no.: 5147 00
- Switching actuator 6-gang, 16 A/blind actuator 3-gang, 16 A Standard, order no.: 5023 00

Example:

Connect the weather control unit sun protection channel SK1 (object 89) to the switching/blind actuator relay outputs 1/2 (object 32) with a group address "sun protection".



Setting the parameters of the weather control unit

Sun protection channels	Activate a sun protection channel, e.g. SK1.
Channel function	Select the appropriate window covering, such as shutters, blinds etc.
Sensor source	Select the sensor for the sun protection.
Activate sun protection from	Select the brightness value for sun protection, e.g. 20,000 lx.
Switchover from sun protection inactive → sun protection active	Evaluation delay for the active sun protection. Do not set the evaluation delay to be too short, as otherwise brief changes in brightness will lead to contrary responses from the drives.
Switchover from sun protection active → sun protection inactive	Evaluation delay for deactivating the sun protection. Do not set the evaluation delay to be too short, as otherwise brief changes in brightness will lead to contrary responses from the drives.
Threshold can be overwritten by object	If the set brightness value is to be changed.
Object polarity sunshine message	The parameter determines at which object value "Sunshine" or "No sunshine" is transmitted. The polarity must match the parameters of the switching/blind actuator.
Specify sun protection position	No. The position should be parameterised in the switching/blind actuator.

Setting the parameters of the switching actuator 6-gang, 16 A/blind actuator 3-gang

General	Activate outputs for blinds, e.g. A1/A2.
Operating mode	Select the appropriate window covering, such as shutters, blinds etc.
Times	Set the movement times for the window coverings.
Authorisations	Activate the sun protection function.
Polarity of "sunshine" object	The parameter determines at which object value "Sunshine" or "No sunshine" is transmitted. The polarity must match the parameters of the weather control unit.
Sun protection start	Set the parameters for the start of the sun protection. The delay time assigned here is added to the evaluation delay of the weather control unit.
Sun protection end	Set the parameters for the end of the sun protection.

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